

ABSTRACT

Multilayer ceramic chip capacitors which satisfy COG requirements and which are compatible with reducing atmosphere sintering conditions so that non-noble metals such as nickel and nickel alloys thereof may be used for internal and external electrodes are made in accordance with the invention. The capacitors exhibit desirable dielectric properties (high capacitance, low dissipation factor, high insulation resistance), excellent performance on highly accelerated life testing, and very good resistance to dielectric breakdown. The dielectric layers comprise a strontium zirconate matrix doped with other metal oxides such as TiO_2 , MgO , B_2O_3 , CaO , Al_2O_3 , SiO_2 , and SrO in various combinations.